

Datasheet: MCA275A647

**BATCH NUMBER 154483**

<b>Description:</b>	MOUSE ANTI RAT CD11b:Alexa Fluor® 647
<b>Specificity:</b>	CD11b
<b>Other names:</b>	INTEGRIN ALPHA M CHAIN, MAC-1
<b>Format:</b>	ALEXA FLUOR® 647
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	OX-42
<b>Isotype:</b>	IgG2a
<b>Quantity:</b>	100 TESTS/1ml

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat - 1/20

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

<b>Target Species</b>	Rat		
<b>Product Form</b>	Purified IgG conjugated to Alexa Fluor® 647- liquid		
<b>Max Ex/Em</b>	<b>Fluorophore</b>	<b>Excitation Max (nm)</b>	<b>Emission Max (nm)</b>
	Alexa Fluor®647	650	665
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on protein G from tissue culture supernatant.		
<b>Buffer Solution</b>	Phosphate buffered saline		
<b>Preservative Stabilisers</b>	0.09% Sodium Azide		
	1% Bovine Serum Albumin		
<b>Approx. Protein</b>	IgG concentration 0.05 mg/ml		

## Concentrations

**Immunogen** Resident rat peritoneal macrophages.

**RRID** AB\_324731

**Fusion Partners** Spleen cells from immunised BALB/c mice were fused with cells of the NSO/U mouse myeloma cell line.

**Specificity** **Mouse anti Rat CD11b, clone OX-42**, recognizes rat CD11b, also known as [integrin alpha-M](#), the receptor for the iC3b component of complement. CD11b is a 1151 amino acid single pass type 1 transmembrane glycoprotein possessing a single [vWFA](#) domain and multiple [FG-GAP](#) repeats. CD11b is expressed on most macrophages, including resident and activated peritoneal macrophages and Kupffer cells and around 35% of alveolar macrophages. The antibody also labels dendritic cells, granulocytes and [microglia](#) in the brain ([Robinson et al.1986](#)).

Mouse anti Rat CD11b, clone OX-42 is reported to inhibit complement mediated rosettes ([Robinson et al.1986](#)) as well as inhibit myelin binding and uptake ([van der Laan et al.1996](#)).

**Flow Cytometry** Use 10ul of the suggested working dilution to label 10<sup>6</sup> cells in 100ul.

## References

1. Robinson, A.P. *et al.* (1986) Macrophage heterogeneity in the rat as delineated by two monoclonal antibodies MRC OX-41 and MRC OX-42, the latter recognizing complement receptor type 3. [Immunology. 57 \(2\): 239-47.](#)
2. Barclay, A.N. (1981) The localization of population of lymphocytes defined by monoclonal antibodies in rat lymphoid tissues. [Immunology. 42: 593-600.](#)
3. Milligan, C.E. *et al.* (1991) Differential immunochemical markers reveal the normal distribution of brain macrophages and microglia in the developing rat brain. [J Comp Neurol. 314 \(1\): 125-35.](#)
4. Whiteland, J.L. *et al.* (1995) Immunohistochemical detection of T-cell subsets and other leukocytes in paraffin-embedded rat and mouse tissues with monoclonal antibodies. [J Histochem Cytochem. 43 \(3\): 313-20.](#)
5. Zilka, N. *et al.* (2009) Human misfolded truncated tau protein promotes activation of microglia and leukocyte infiltration in the transgenic rat model of tauopathy. [J Neuroimmunol. 209 \(1-2\): 16-25.](#)
6. Shokouhi, B.N. *et al* (2010) Microglial responses around intrinsic CNS neurons are correlated with axonal regeneration. [BMC Neurosci. 11: 13.](#)
7. Calvo, M. *et al.* (2010) Neuregulin-ErbB signaling promotes microglial proliferation and chemotaxis contributing to microgliosis and pain after peripheral nerve injury. [J Neurosci. 30 \(15\): 5437-50.](#)
8. Jean, Y.H. *et al.* (2009) Capnellene, a natural marine compound derived from soft coral, attenuates chronic constriction injury-induced neuropathic pain in rats [Br J Pharmacol. 158: 713-25.](#)
9. Morales-Garcia, J.A. *et al.* (2011) Phosphodiesterase 7 inhibition preserves dopaminergic neurons in cellular and rodent models of Parkinson disease. [PLoS One. 6\(2\):e17240.](#)

10. Spencer-Segal, J.L. *et al.* (2011) Distribution of Phosphorylated TrkB Receptor in the Mouse Hippocampal Formation Depends on Sex and Estrous Cycle Stage. [J Neurosci. 31: 6780-90.](#)
11. Chew, S.S. *et al.* (2011) Response of retinal Connexin43 to optic nerve injury. [Invest Ophthalmol Vis Sci. 52: 3620-9.](#)
12. Huh, S.H. *et al.* (2011) Ethyl pyruvate rescues nigrostriatal dopaminergic neurons by regulating glial activation in a mouse model of Parkinson's disease. [J Immunol. 187: 960-9.](#)
13. Jeong, H.K. *et al.* (2010) Inflammatory responses are not sufficient to cause delayed neuronal death in ATP-induced acute brain injury. [PLoS One. 5: e13756.](#)
14. Liew, H.K. *et al.* (2012) Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. [J Neuroinflammation. 9: 13.](#)
15. Szmydynger-Chodobska, J. *et al.* (2011) Multiple sites of vasopressin synthesis in the injured brain. [J Cereb Blood Flow Metab. 31: 47-51.](#)
16. Tchoukalova, Y.D. *et al.* (2012) *In vivo* adipogenesis in rats measured by cell kinetics in adipocytes and plastic-adherent stroma-vascular cells in response to high-fat diet and thiazolidinedione. [Diabetes. 61: 137-44.](#)
17. Xu, Q. *et al.* (2011) Spinal phosphoinositide 3-kinase-Akt-mammalian target of rapamycin signaling cascades in inflammation-induced hyperalgesia. [J Neurosci. 31: 2113-24.](#)
18. Lovett-Barr, M.R. *et al.* (2012) Repetitive intermittent hypoxia induces respiratory and somatic motor recovery after chronic cervical spinal injury. [J Neurosci. 32 \(11\): 3591-600.](#)
19. Lavis, S. *et al.* (2012) Reactive astrocytes overexpress TSPO and are detected by TSPO positron emission tomography imaging. [J Neurosci. 32: 10809-18.](#)
20. Ortega, F.J. *et al.* (2012) Glibenclamide enhances neurogenesis and improves long-term functional recovery after transient focal cerebral ischemia. [J Cereb Blood Flow Metab. 33: 356-64.](#)
21. Zhao, H. *et al.* (2013) Brain 3-Mercaptopyruvate Sulfurtransferase (3MST): Cellular Localization and Downregulation after Acute Stroke. [PLoS One. 8\(6\):e67322.](#)
22. Huang S *et al.* (2015) Expression of Peroxiredoxin 1 After Traumatic Spinal Cord Injury in Rats. [Cell Mol Neurobiol. May 24. \[Epub ahead of print\]](#)
23. Wang, A.Y. *et al.* (2015) Searching for a rat model of chronic tympanic membrane perforation: Healing delayed by mitomycin C/dexamethasone but not paper implantation or iterative myringotomy. [Int J Pediatr Otorhinolaryngol. 79 \(8\): 1240-7.](#)
24. Hernangómez M *et al.* (2016) CD200R1 agonist attenuates glial activation, inflammatory reactions, and hypersensitivity immediately after its intrathecal application in a rat neuropathic pain model. [J Neuroinflammation. 13 \(1\): 43.](#)
25. Signarovitz, A.L. *et al.* (2012) Mucosal immunization with live attenuated *Francisella novicida* U112ΔiglB protects against pulmonary *F. tularensis* SCHU S4 in the Fischer 344 rat model. [PLoS One. 7: e47639.](#)
26. Liu, Z. *et al.* (2016) Leukocyte Infiltration Triggers Seizure Recurrence in a Rat Model of Temporal Lobe Epilepsy. [Inflammation. Apr 4. \[Epub ahead of print\].](#)
27. Szmydynger-Chodobska, J. *et al.* (2016) The Involvement of Pial Microvessels in Leukocyte Invasion after Mild Traumatic Brain Injury. [PLoS One. 11 \(12\): e0167677.](#)
28. Ejaz, S. *et al.* (2014) MRI and neuropathological validations of the involvement of air pollutants in cortical selective neuronal loss. [Environ Sci Pollut Res Int. 21 \(5\): 3351-62.](#)

29. Alizadeh, A. *et al.* (2017) Neuregulin-1 positively modulates glial response and improves neurological recovery following traumatic spinal cord injury. [Glia. Apr 29. \[Epub ahead of print\]](#)
30. Popiolek-Barczyk, K. *et al.* (2017) Biphalin, a Dimeric Enkephalin, Alleviates LPS-Induced Activation in Rat Primary Microglial Cultures in Opioid Receptor-Dependent and Receptor-Independent Manners. [Neural Plasticity. 2017: 1-19.](#)
31. Huang RY *et al.* (2017) Rapid and Delayed Effects of Pulsed Radiofrequency on Neuropathic Pain: Electrophysiological, Molecular, and Behavioral Evidence Supporting Long-Term Depression. [Pain Physician. 20 \(2\): E269-E283.](#)
32. Bourke, G. *et al.* (2017) Effects of early nerve repair on experimental brachial plexus injury in neonatal rats. [J Hand Surg \(Eur Vol\). 1753193417732696 \[Epub ahead of print\].](#)
33. Wang, Z.C. *et al.* (2017) Involvement of NF- $\kappa$ B and the CX3CR1 Signaling Network in Mechanical Allodynia Induced by Tetanic Sciatic Stimulation. [Neurosci Bull. Jun 13 \[Epub ahead of print\].](#)
34. Klemm, P. *et al.* (2019) Hypothermia protects retinal ganglion cells against hypoxia-induced cell death in a retina organ culture model. [Clin Exp Ophthalmol. Jun 01 \[Epub ahead of print\].](#)
35. de Sousa, É *et al.* (2013) Developmental and functional expression of miRNA-stability related genes in the nervous system. [PLoS One. 8 \(5\): e56908.](#)
36. van Vliet, E.A. (2020) Long-lasting blood-brain barrier dysfunction and neuroinflammation after traumatic brain injury [Neurobiol Dis 11:13.](#)
37. Kuo, T. *et al.* (2020) Post-stroke Delivery of Valproic acid Promotes Functional Recovery and Differentially Modifies Responses of Peri-infarct Microglia. [Res Sq; Dec 01. \[Preprint Epub ahead of print\].](#)
38. Szeredi, I.D. *et al.* (2020) Prior perineural or neonatal treatment with capsaicin does not alter the development of spinal microgliosis induced by peripheral nerve injury. [Cell Tissue Res. Sep 22 \[Epub ahead of print\].](#)
39. Lin, J. *et al.* (2020) Protective effect of Soluble Epoxide Hydrolase Inhibition in Retinal Vasculopathy associated with Polycystic Kidney Disease. [Theranostics. 10 \(17\): 7857-71.](#)
40. Tanaka, J. *et al.* (2020) Generation of CSF1-Independent Ramified Microglia-Like Cells from Leptomeninges *In Vitro*.. [Cells. 10 \(1\) Dec 25 \[Epub ahead of print\].](#)
41. Espinosa-Garcia, C. *et al.* (2020) Progesterone Attenuates Stress-Induced NLRP3 Inflammasome Activation and Enhances Autophagy following Ischemic Brain Injury. [Int J Mol Sci. 21 \(11\): 3740.](#)
42. Memedovski, Z. *et al.* (2020) Classical and Alternative Activation of Rat Microglia Treated with Ultrapure *Porphyromonas gingivalis* Lipopolysaccharide *In Vitro*.. [Toxins \(Basel\). 12\(5\): 333.](#)
43. Mecha, M. *et al.* (2020) Involvement of Wnt7a in the role of M2c microglia in neural stem cell oligodendrogenesis. [J Neuroinflammation. 17 \(1\): 88.](#)
44. Terayama, R. *et al.* (2018) A<sub>3</sub> adenosine receptor agonist attenuates neuropathic pain by suppressing activation of microglia and convergence of nociceptive inputs in the spinal dorsal horn. [Exp Brain Res. 236 \(12\): 3203-13.](#)
45. Sugama, S. *et al.* (2019) Stress-induced microglial activation occurs through  $\beta$ -adrenergic receptor: noradrenaline as a key neurotransmitter in microglial activation. [J Neuroinflammation. 16 \(1\): 266.](#)
46. Winkler, A. *et al.* (2021) Blood-brain barrier resealing in neuromyelitis optica occurs independently of astrocyte regeneration. [J Clin Invest. 131\(5\):e141694.](#)

<b>Storage</b>	<p>Store at +4°C or at -20°C if preferred.</p> <p>Storage in frost-free freezers is not recommended.</p> <p>This product should be stored undiluted. This product is photosensitive and should be protected from light.</p> <p>Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.</p>
<b>Guarantee</b>	12 months from date of despatch
<b>Acknowledgements</b>	<p>This product is provided under an intellectual property licence from Life Technologies Corporation. The transfer of this product is contingent on the buyer using the purchase product solely in research, excluding contract research or any fee for service research, and the buyer must not sell or otherwise transfer this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; (c) manufacturing or quality assurance or quality control, or (d) resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5791 Van Allen Way, Carlsbad CA 92008 USA or <a href="mailto:outlicensing@thermofisher.com">outlicensing@thermofisher.com</a></p>
<b>Health And Safety Information</b>	<p>Material Safety Datasheet documentation #10041 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA275A647">https://www.bio-rad-antibodies.com/SDS/MCA275A647</a></p> <p>10041</p>
<b>Regulatory</b>	For research purposes only

## Related Products

### Recommended Negative Controls

[MOUSE IgG2a NEGATIVE CONTROL:Alexa Fluor® 647 \(MCA1210A647\)](#)

<b>North &amp; South America</b>	<p>Tel: +1 800 265 7376</p> <p>Fax: +1 919 878 3751</p> <p>Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a></p>	<b>Worldwide</b>	<p>Tel: +44 (0)1865 852 700</p> <p>Fax: +44 (0)1865 852 739</p> <p>Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a></p>	<b>Europe</b>	<p>Tel: +49 (0) 89 8090 95 21</p> <p>Fax: +49 (0) 89 8090 95 50</p> <p>Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a></p>
----------------------------------	--	------------------	--	---------------	--

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://bio-rad-antibodies.com/datasheets)  
'M367423:200529'

Printed on 23 May 2025